BEFORE THE
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

Investigation No. 332-491
China: Government Policies Affecting
U.S. Trade in Selected Sectors

Pre-hearing Submission of

Alan Wm. Wolff
Dewey & LeBoeuf LLP

on behalf of the

Semiconductor Industry Association

October 16, 2007

Semiconductor Industry Association
181 Metro Drive, Suite 450
San Jose, CA 95110

For further information, please contact:

Daryl Hatano
Vice President Public Policy
Semiconductor Industry Association
Email: dhatano@sia-online.org
Telephone No. 408-573-6605

Anne B. Craib
Director International Trade & Government Affairs
Semiconductor Industry Association
Email: acraib@sia-online.org
Telephone No. 408-573-6606

Alan Wm. Wolff
Counsel to Semiconductor Industry Association

Partner
Dewey & LeBoeuf LLP
Email: awolff@dl.com
Telephone No. 202-429-2352

SIA

The Semiconductor Industry Association (SIA) is the premier trade association representing the U.S. semiconductor industry. Founded in 1977 by five microelectronics innovators, SIA unites 95 companies responsible for more than 85 percent of semiconductor production in this country to address issues of concern to the industry. Collectively, the chip industry employs a domestic workforce of 232,000 people. Semiconductors are America's second largest export, amounting to 52.4 billion in 2006.[1]

SIA provides domestic semiconductor companies a forum to advance the global competitiveness of the $115 billion U.S. chip industry. Through a network of corporate CEOs and working committees, SIA shapes public policy on issues critical to the industry and provides a spectrum of services to aid members in enhancing the growth of their own businesses.

SIA in China

SIA has had official meetings in China with Chinese government officials and Chinese industry representatives for over a decade. It has held numerous consultations with the China Semiconductor Association (CSIA) both in China and in the United States. SIA was active in working with the U.S. government for Chinese accession to the World Trade Organization (WTO). The Protocol of Accession includes a number of provisions that were SIA priorities -- including zero tariffs for semiconductors, a requirement that state-owned and invested enterprises make market-based purchasing decisions, provisions on fair trade, protection of intellectual property, and avoidance of forced technology transfer. With the conclusion of a positive basis for China's entry into the WTO, SIA worked to support passage of the necessary legislation for the United States to enter into Permanent Normal Trade Relations with China.

In 2006, SIA opened an office in Beijing to facilitate communications with both the Chinese government and industry. China policy has been important to SIA throughout this period.

Also in 2006, the Semiconductor Industry Association (SIA) Board, led by its Chairman at that time, Brian Halla, CEO of National Semiconductor, met with Chinese government officials led by Vice Premier Zeng Peiyan. The meeting took place in the Pavilion of Purple Light, in the Chinese Government's leadership compound *Zhongnanhai*. The building had been erected by Kubla Khan in the 13th century, but what was being discussed was cutting edge technology. The purpose of the meeting was to welcome China into a worldwide inter-governmental semiconductor organization (the Governments and Authorities Meeting on Semiconductors -- GAMS) and the Chinese industry into the World Semiconductor Council (WSC). The conversation was remarkable for many reasons, but the ones that stood out were first, the commitment of China to join an organization of semiconductor producing governments and authorities committed to barrier free international trade in semiconductors, and second, but equally,

[1] Bureau of Economic Statistics, Exhibit 6. Exports of Goods by End-Use Category and Commodity, 2006.

the depth of knowledge displayed by the Chinese leadership about current developments in semiconductor technology.

Clearly WTO membership has been a positive force with respect to China's regulatory regimes affecting semiconductors. Tariffs on semiconductors were immediately eliminated, and China joined the Information Technology Agreement, phasing out tariffs on IT products generally. A fully WTO-compliant chip layout design protection statute was adopted. Where there was a discriminatory value-added tax rebate favoring domestically produced chips, after formal consultations under WTO auspices, China removed the measure. Where there was a threat of forced technology transfer regarding wireless LAN products, China refrained from imposing that portion of its national standard scheme.

The China Semiconductor Industry Association (CSIA) is now an active participant in the World Semiconductor Council and its various subsidiary bodies. It is expected that China will shortly join a series of commitments that other GAMS members have already undertaken to expand duty free treatment to new forms of semiconductors and to reduce or eliminate the use of various chemicals that can have an adverse environmental impact. The greatest current obstacle to international cooperation with China in the GAMS and WSC comes from an unanticipated source -- the inability of Chinese government officials and industry executives to gain entry into the United States in time to attend the meetings the United States government and our industry hosted a month ago in Dallas. The fault does not lie solely with either government, but the failure of the visa application processes that are in place deprived these important government and industry fora of Chinese participation.

I. The Importance of China to the U.S. Semiconductor Industry

Market. In 2005, China became the world's largest integrated circuit consumer market for the first time, larger than either the United States or Japan.[2] See figure 1. Consumption of integrated circuits in China has grown to a forecast level of nearly $60 billion this year. See figure 2. China leads the world in electronics market growth, accounting for 30% of world growth between 2004 and 2007. See figure 3. Chinese share of global motherboard production is about 73% and climbing. See figure 4. In 2004, for the first time, China surpassed the United States in exports of information and communication technology products.[3] For American semiconductor companies, China is the largest, fastest engine for growth.

Source of Supply. In 2006, China represented less than ten percent of the world's installed semiconductor manufacturing capacity, as against 17.6 percent in the

---

2 China Becomes Largest IC Market, EE Times (January 8, 2006) and China Became the World's Largest IC Market in 2005, IC Insights (January 9, 2006).

3 "China Overtakes U.S. as World's Leading Exporter of Information Technology Goods," Organization for Economic Cooperation and Development (December 12, 2005).

United States.[4] Approximately 4.5 percent of China's semiconductor manufacturing capacity in 2006 was at the .12 micron process technology node or below, as against 41.4 percent in the United States. Approximately half of the chips produced by China's most advanced semiconductor foundry in 2006, Semiconductor Manufacturing International Corp. (SMIC), were manufactured using 0.13 micron process technology or below, and about two-thirds of SMIC's production was of logic devices.[5] SMIC introduced China's first 12-inch fabrication facility, and in 2006 was constructing a second and equipping two others.[6] The company plans pilot production of devices at the 65-nanometer level by the end of 2007, just a step below worldwide state of the art process technology which was projected to be 45 nanometers in 2007 by one electronics journal.[7]

While China's installed base of capacity is small and not advanced as in the U.S., it is growing rapidly and includes new equipment. A good indicator of where leading edge capacity is being built around the world is found by tracking the share of shipments of new wafer processing equipment. The U.S. has fallen dramatically on this score in the past five years from 29% of the world in 2001 to only 19% in 2006 – a ten percentage point drop. During this period, the share of shipments going to Europe and Japan also dropped by six and five percentage points respectively; while the share of shipments going to Korea and Taiwan increased by 11 and eight percentage points respectively. The larger markets in "rest of world" would include Singapore, Malaysia, Philippines, and Russia.

China, which represented a negligible percentage of new semiconductor wafer processing shipments in 2001, increased to 3% in 2005, 5% in 2006, and is projected to continue to grow rapidly. Much of the reason for the shift in purchases of new equipment from the U.S., Europe, and Japan to Korea, Taiwan, and China relates to tax and grants provided by governments, as is explained in the "tax policy" section below.

---

4 As measured in 200 mm-equivalent wafers. "The Global Wafer Capacity Analysis and Forecast 2006-2011," IC Insights, undated.

5 Semiconductor Manufacturing International Corp. Form 20-F for the Period Ending December 31, 2006, pp. 24, 29.

6 Semiconductor Manufacturing International Corp. Form 20-F for the Period Ending December 31, 2006, pp. 22.

7 Q 2 2007 Semiconductor Manufacturing International Corp. (SMIC) Earnings Conference Call- Final, FD Wire, July 26, 2007, pp. 3, 9. Encyclopedia, EE Times, undated, as at http://www.eetimes.com/encyclopedia/defineterm.jhtml?term =process+technology.

Percent of New Wafer Processing Equipment Shipments by Region[8]

	North America	Europe	Japan	Korea	Taiwan	China	Rest of World
2001	29%	15%	27%	8%	12%	not available, but small	9%
2006	19%	9%	22%	19%	20%	5%	6%

Design engineering. Competition between chip manufacturers is increasingly based on "design-in," a mixture of information and assistance for system engineers who are in the position to create designs around a specific chip.[9] With respect to designing-in a product for the Chinese market specifically, PricewaterhouseCoopers observes that China will prove particularly demanding: "[C]hipset and module makers will find it necessary to *develop reference designs* and perform *more system design* in general [for the Chinese market]."[10] U.S. semiconductor manufacturers require a major design and sales presence in China to provide "local" services to convince Chinese electronics manufacturers to adopt their chips over other competitors for inclusion in newly-developed, indigenous products.

Host for investment. It is a uniformly held view among analysts of the Chinese semiconductor market that "China has become a key location for the world's electronic system manufacturing and its domestic supply chain will grow to support this market."[11] A recent PricewaterhouseCoopers report summarized the related factors that will determine a company's competitive position in China, emphasizing a firm's manufacturing presence:[12]

> "Proximity to the [Chinese] market confers several advantages, mostly competitive. It enables companies to establish themselves as a player in a market that is becoming more competitive and it enables them to respond with agility to changing market needs. In view of the substantial growth predicted for the Chinese semiconductor market, companies want to be established early and

---

8 SIA presentation drawing on Strategic Marketing Associates (September 2006).

9 "Design-in" involves using web sites, reference designs, software tools, and consulting engineers to prove that chips work in a customer's applications and should be present during the customer's semiconductor supplier selection process. The Design-In Challenge, Electronics Design Chain, Summer 2003 Issue, Volume 2.

10 "China's Impact on the Semiconductor Industry," PricewaterhouseCoopers (2004), p. 9.

11 "China Capital Equipment and Electronic Materials Outlook Executive Summary," Semiconductor Equipment Manufacturers International (SEMI) (2005), unpaginated.

12 "China's Impact on the Semiconductor Industry," PricewaterhouseCoopers (2004), p. 18. See also lack of Japanese manufacturing presence as a principal explanatory factor for the U.S. semiconductor industry's failure to penetrate the Japanese market in the 1980s in "Creating Advantage Semiconductors and Government Industrial Policy in the 1990s," Thomas R. Howell, Brent L. Bartlett, and Warren Davis (1992), p. 98. See also pivotal role attributed to manufacturing presence for Applied Materials in Japan in "Building Competitive Advantage through a Global Network of Capabilities," Andrew Bartmess and Keith Cerny, California Management Review, Volume 35, Number 2, Winter 1993, p. 89.

position themselves against domestic and transnational competitors as early as possible….Beyond competitive benefits, a manufacturing presence in China provides obvious logistical benefits for serving customers".[13]

Potential/actual competitor. Companies in global capital and research-intensive industries cannot compete effectively by monitoring strategic markets from a distance.[14] Past experience with Japan demonstrates the palpable risks of not being fully integrated into a foreign market.[15] The U.S. semiconductor industry began the 1980s in a position of commanding leadership in all major product areas, but experienced a rapid decline relative to Japan as Japanese manufacturing grew and U.S. industry was denied access to the Japanese market. China's development model differs very substantially from Japan's. Chinese economic development has depended crucially on foreign direct investment, and there has been very substantial foreign investment in China in this sector. For U.S. companies this has consisted largely of design, test and assembly. However, there is a question whether China's openness to foreign investment will go unchallenged by interests within the Chinese government. There are enough statements from authoritative sources in China that China seeks to create and promote indigenous semiconductor technology, indigenous semiconductor firms, and an increasingly "Chinese" end-user base that continued access to and involvement in China's market cannot be taken for granted.

The emergence of a formidable Chinese competitor is envisioned by China's market analysts.[16] That this has not happened yet does not mean that the possibility should be discounted.

II. China's Regulatory Environment - Status and Concerns

Emerging from a completely state-dominated and run economy, China has adopted a number of new and evolving regulatory regimes, some spurred by China's accession to the WTO, and others necessitated by the movement toward an economy in which market forces increasingly determine competitive outcomes. Several areas deserve specific attention. These include competition policy, product standards, intellectual property protection, product accreditation (a China specific form of government regulation), government procurement and investment policy. In each case, the policies and measures can be simply what they appear to be, relatively non-distortive tools every

---

13 "China's Impact on the Semiconductor Industry," PricewaterhouseCoopers (2004), p. 17.

14 "Monitoring from a distance cannot achieve the full benefits possible through physical location." George S. Yip, Total Global Strategy: Managing for Worldwide Competitive Advantage, University of California, Los Angeles (1995), p. 97.

15 "Analysis of the Effects of Targeting on the Competitiveness of the U.S. Semiconductor Industry," a study prepared for the Unites States Trade Representative, the Department of Commerce, and the Department of Labor (May 31, 1985), p. V 7.

16 PricewaterhouseCoopers believes that a major integrated device manufacturer (as opposed to a mere foundry) will emerge in China around 2010 driven by "the sale of products designed for Chinese needs…." "China's Impact on the Semiconductor Industry," PricewaterhouseCoopers (2004), p. 9. Mike Tarsala, Chinese Startup Reportedly to Produce 64-bit Chips, CBS MarketWatch (March 6, 2003).

government uses to regulate economic activity. However, regulatory tools can also be used to favor domestic competitors over foreign competitors. The concern of foreign businesses is heightened by statements by Chinese officials who are anxious about foreign competition, and feel a need to curb it and to protect domestic producers.

As the largest change this year has been in the area of competition policy, that will be a major focus of this testimony. Competition policy, while not innately more important to foreign companies selling in China than standards measures or IP enforcement, for example, can have a major impact on the semiconductor industry because of its interplay with intellectual property, as will be seen from examples given in the discussion below.

A. China's New Antimonopoly Law

In 1978 China's leaders launched the country on a program of long run economic reform, emphasizing the introduction of market-based principles, enterprise autonomy, private ownership, and entrepreneurialism. China's State Council called for enactment of antimonopoly legislation in the late 1980s, and drafting of what was to become the Antimonopoly Law began in 1994.

The Ministry of Commerce (MOFCOM) emerged as the principal drafting agency, although many other governmental organizations were consulted. The officials involved in the drafting also consulted extensively with foreign competition officials, academics, attorneys, and business executives. China's Antimonopoly Law was enacted August 30, 2007 and becomes effective on August 1, 2008. It is widely believed that these extensive consultations resulted in substantial improvements in the law that was ultimately enacted, and increased sophistication with respect to competition policy issues by the Chinese officials engaged in this process. The Chinese government is to be applauded on the degree of outreach in which it engaged in the process of crafting its law, and the transparency of its drafting process. In this, it was the equal or better of any other major trading country.

Enactment of antimonopoly legislation is potentially a very positive step. However, it is not clear how the new law will be administered. U.S. antitrust policy is enforced to protect "competition not competitors" and is enforced with the sole objective of maximizing consumer benefits by promoting economic efficiency. A number of other countries take the position that when a company achieves a certain size and market share it becomes "dominant," and that its competitive efforts should be subject to heightened regulatory scrutiny. A number of commercial practices that would be considered unobjectionable if employed by smaller firms may be deemed "abuse of a dominant position" if utilized by a "dominant" entity. As former and current U.S. antitrust officials point out, however, complaints about abuse-of-dominance often arise from competitors hoping to secure the assistance of competition authorities in reducing competitive pressure on themselves and/or place regulatory constraints on more efficient rivals.

Earlier versions of China's AML stated that the purpose of the law includes "protecting the legitimate rights and interests of *undertakings* [companies], consumers

and public interest, and promoting healthy development of the socialist market economy." (emphasis added) The law as enacted eliminates protection of "undertakings" as a purpose of the law, and that change, standing alone, could be seen as a positive indication that China is aligning more closely with U.S. practice which holds that the purpose of the antitrust laws is to protect "competition not competitors." However, other parts of the law are indicative that notwithstanding this change in Article 1, the AML is still likely to be applied to protect one group of producers against another in order to further industrial policy objectives. The prohibition on "dominant" undertakings "buying products at unfairly low prices" (Article 16(i)) seems intended only to protect companies, not consumers. Similarly, the exemption from the prohibition on monopoly agreements "for the purpose of mitigating severe decrease of sales volume or excessive stocks in economic recessions" (Article 15(v)) can only benefit companies and is actually disadvantageous to consumers.

Article 17 defines "dominant market position" as a market position held by companies "that can control the price or quantity of products or other transaction conditions by the relevant market *or can block the access of other undertakings to the relevant market.*" (emphasis added) U.S. antitrust officials have expressed concern that such provisions could be applied to a situation in which a U.S. multinational holding proprietary technology refuses to transfer it, thus "blocking access" or making it very "difficult" (e.g. impossible) for other undertakings to enter that product market. Another parameter for determining dominance, "the extent of the reliance on the undertakings during transactions by other undertakings" (Article 18 (iv)) could be applied to the same set of circumstances and a wide range of other situations in which Chinese enterprises must "rely" on technology and technical support from U.S. multinationals holding proprietary technology.

Prohibited "abuses" of a dominant position are itemized in Article 17 of the Law. The proscribed forms of conduct are defined in sweeping and general terms and could be applied to a wide range of what are regarded as normal, legitimate commercial practices in the United States:

> "Selling products at unfairly high prices or buying products at unfairly low prices" (Article 17(i)). This proscription could be applied to IP licensing fees that are deemed "too high." It could be applied to inhibit normal pricing practices commonly found in a competitive market, such as the use of bulk purchasing power to bargain for lower prices or charging premium prices for products for which demand is strong.

> "Refusing to trade with relative trading parties without any justification" (Article 17(iii)). This proscription could be applied to refusals to license proprietary technologies, and to any situation in which a company decides it does not wish to enter into a commercial relationship with another company whether with respect to R&D distribution, sales joint manufacturing, or cross-licensing of technology. A specific example given by the State Administration of Industry and Commerce (SAIC) in 2004 of this type of "abuse" was a U.S. multinational, the largest

manufacturer of network equipment in the world, which was not willing to authorize any other company to use its private protocols for which it owned patent rights or business secrets.

"Implementing tie-in sales without any justification, or imposing other unreasonable trading terms" (Article 17(v)). Interpreted most broadly this provision could be applied to virtually any sale of a product line which combines multiple functions and products.

"Limiting relative trading parties to conduct deals exclusively with them or designated parties without any justification" (Article 17(iv)). This prohibition could be applied to a wide variety of commercial practices, such as exclusive distribution arrangements and cross-licensing technology.

"Applying discriminating treatment on prices or other transaction terms to relative trading partners with equal standing without any justification" (Article 17(vi)). The 2004 SAIC survey explicitly references invoking this provision against multinationals that price their products differently in various geographic markets around the world.

"Other activities that abuse the dominant market position as recognized by the Antimonopoly Enforcement Authority." (Article 17(vii)). This catchall language vests the enforcement authority with discretion to identify other commercial practices which are to be deemed "abusive."

In 2006 Gerald F. Massoudi, Deputy Assistant Attorney General in the Antitrust Division of the U.S. Department of Justice, reviewed the practices defined as "abuses" by China's then-draft AML. He stated that

> "Refusals to deal, exclusive dealing, tying and price discrimination all can be used for pro-competitive, efficiency-enhancing reasons and in only very limited circumstances will have anticompetitive effects, even when used by a firm with a dominant market position. Indeed, practices such as these are very common in highly competitive markets, reflecting that such distribution methods can reduce costs and improve efficiency. Therefore, it is important that these practices not be presumed to be anticompetitive, either in the law or by the antimonopoly enforcement agency in implementing the law. These practices should be viewed as unlawful only if, after a detailed analysis of the conduct, the market, and proffered business justifications, it is determined that the conduct harms competition by creating, maintaining or strengthening the monopoly power of the dominant firm and that the conduct makes economic sense to the firm only because of its anticompetitive effects."[17]

---

17 Gerald F. Massoudi, "Key Issues Regarding China's Antimonopoly Legislation," (Presented to the International Seminar on Review of the Antimonopoly Law, Hangzhou, China, May 19, 2006).

Article 55 of the Law provides that the law is "not applicable to conducts [sic] by undertakings to protect their legitimate intellectual property rights in accordance with IP law and relevant administrative regulations." However, it states that "this law is applicable to the conducts [sic] by undertakings to eliminate or restrict market competition by abusing intellectual property rights stipulated in IP law and administrative regulations." "Abuse" of IP is not further defined but the provisions of Article 17 itemizing the forms of "abuse of a dominant position" include (i) "selling at unfairly high" prices, which could be applied to IP licensing fees, and (ii) "refusing to trade with relative trading parties without any justification," which could be applied to instances of refusal of an IP holder to license proprietary technologies to competitors.

It is unclear from AML Article 7 whether state-owned enterprises are subject to, exempt from, or partially subject to the AML. Read together with the remainder of the Law, Article 7 suggests that there will be, in effect, two competition policy regimes -- one characterized by government oversight and regulation of enterprise behavior pursuant to the AML and the other by direct government administration of pricing and enterprise conduct in state-owned enterprise (SOE)-dominated sectors pursuant to Article 7 and industry-specific laws. It is entirely possible that the SOE-dominated sectors will be subject to more lenient treatment under the AML than those sectors in which foreign enterprises play a more important role.

Article 31 provides that with respect to acquisition of domestic enterprises by "foreign capital" as well as "other circumstances involving the concentration of foreign capital," if "national security is concerned an examination shall be conducted "according to the relevant regulations of the State." This provision contemplates a security-related policy review of acquisitions comparable to the scrutiny given inward foreign investment in the U.S. by the Committee as Foreign Investment in the United Sates (CFIUS). The addition of this Article to the AML has created some confusion to the effect that a new national security review process has been created. As a practical matter such review occurs already with respect to FDI, and transactions with national security implications which will apparently continued under separate procedures as before. There has been domestic criticism in China among advisors in the AML drafting process that the AML should not be used for purposes other than competition policy, that it not become an additional national security or industrial policy tool, and that it should not come to be viewed as being anti-foreign.

* * * * * * *

It is to be hoped that the AML as enacted will promote greater play of market forces in the Chinese economy. Segments of the Chinese economy in which less competition may be present, such as SOEs, may not be subject to this law. This could lead to a paradoxical situation in which, in the area of the Chinese economy which has proven most robust, that is, where significant levels of foreign investment have been permitted, the most technologically advanced and successful enterprises may be exposed to discriminatory and unwarranted enforcement. This should be a concern for both Chinese policymakers as well as American and other foreign governments and businesses. In the worst case, foreign enterprises found to have abused a dominant

position by withholding proprietary technology might confront cease-and-desist orders under Article 47 directing them to transfer IPR and technology to Chinese competitors. The fact that AML enforcement authority may be dispersed to regional and local governments through delegation of authority simply increases the level of risk for large, successful firms.

Chinese policymakers should be encouraged to clarify ambiguities prior to the effective date of the AML in August 2008, and to take an initial, very considered approach" in implementing the law. The example might be cited of Japan, which for many years placed heaviest emphasis on promulgation of guidelines identifying specific types of conduct regarded as problematic rather than on enforcement proceedings.[18] Also, given the lack of experience and resources, any enforcement focus in the near term should be on more straightforward anti-competitive conduct such as price fixing by cartels.

B. Product Standards

China's approach to standard-setting continues to generate concern among U.S. companies. In 2007, the American Chamber of Commerce of China reported on six areas with respect to standards-setting in China, focusing in particular on lack of transparency and open participation in the standards-setting process, a concern echoed by the U.S. Trade Representative's office,[19]

> "In some cases, U.S. companies do not learn of new or amended technical regulations until their shipments are held at Chinese customs. Under these circumstances, U.S. companies are unable to either anticipate changes or participate in the development of market-relevant standards and technical regulations."[20]

In addition, industry has said that while the official coordinators for standard setting in China, such as the Standards Administration of China (SAC), are involved in international standards setting processes such as those of the International Standards Organization (ISO), their activities are not necessarily coordinated with those at the individual ministry-level, where efforts are often made to develop home-grown standards, particularly in the area of electronics, etc.[21] U.S. industry is also worried that "converging policies could hinder U.S. organizations' ability to protect patented

---

18 A more complete exposition of the AML is attached to this paper as Annex A.

19 A 2007 USTR report stated, "the vast majority of [Chinese] standards-setting bodies are not fully open to foreign participation, in some cases refusing membership to foreign firms and in other cases, refusing to allow companies with majority foreign ownership to vote. In some cases, foreign firms are allowed non-voting observer status, but are required to pay membership fees far in excess of those paid by voting members." USTR, 2007 National Trade Estimate Report on Foreign Market Barriers, pp. 93-94.

20 The American Chamber of Commerce People's Republic of China, 2007 White Paper American Business in China, p. 44.

21 The American Chamber of Commerce People's Republic of China, 2007 White Paper American Business in China, p. 44.

technology in the standardization process, and ultimately, to innovate and compete in the Chinese market."[22]

China is striving to promote its own technology standards and to transform Chinese standards into international standards. There are some indications that this general policy applies specifically to semiconductors. By itself this goal is unobjectionable, unless Chinese technology standards deviate from already existing, relevant international standards without a legitimate reason (and therefore constitute an unwarranted barrier to trade). As noted in the recent OECD China Innovation Review Synopsis:

"In China, it is widely seen as legitimate to make use of a standards regime that can help increase Chinese firms' returns on investment in technology and can be instrumental in fostering innovation.

The challenge for China is to develop a standards regime that is in line with WTO regulations and does not eventually lead to distortions of national and international competition and thus stifle innovation."

In the case of the original wireless LAN standard (WAPI), a national standard was mandated, despite the existence of relevant and more effective international standards, to attempt to require transfer of foreign technology in what would undoubtedly have been found to be a violation of the WTO Agreement on Technical Barriers to Trade. Clearly product standards can be used by governments to make a market more efficient or, alternatively, to restrict competition. It is a powerful policy measure.

C. Intellectual Property Protection and Anti-Counterfeiting

There is a recognition at senior levels of the central government that protection of intellectual property rights (IPR) and eliminating counterfeiting is in China's self interest because protecting IPR encourages domestic innovation and eliminating counterfeiting improves the reliability of Chinese products. However enforcement is woefully inadequate in some local regions and the central government has been unable to turn its policy objectives into action on the ground in all regions.

China passed a WTO-compliant layout design IP protection law as part of its WTO accession, and has engaged in a constructive dialogue on the need for increased transparency on enforcement and private sector initiatives to inform companies about IP rights. The SIA has worked with its counterpart in China, the China Semiconductor Industry Association, on an IP Seminar in Beijing in 2004 and on briefings related to China's joining the IP Task Force of the World Semiconductor Council (WSC) in 2006. The Chinese association has been a valuable and engaged member of the IP Task Force in 2007, and joined the Semiconductor Industry Associations in the U.S., Japan, European Union, Korea and Chinese Taipei as the WSC clarified and reconfirmed the

---

22 The American Chamber of Commerce People's Republic of China, 2007 White Paper American Business in China, p. 44.

position papers "WSC Policy Regarding Layout Design Intellectual Property," and "WSC Statement on the Application of Layout Design Laws to Copying of Protected Layout Designs Using Improved Automated Design Tools" which had been approved by the WSC in 2004 and 2006 respectively.

Counterfeiting of semiconductors is a growing problem, and China is the source of many of the counterfeits. Shenzhen in particular is often mentioned as lax in enforcing anti-counterfeiting laws. The most common form of counterfeiting is a remarked product, where the counterfeiter scrapes off the label on a package in which the individual semiconductor part is encased and remarks it with a different brand, speed, or part number. The part is then sold outside of authorized channels and purchased by an unwary buyer. If the buyer's quality control process does not catch the fraud, the counterfeit semiconductor may be used in an application for which it was not intended and where it will either fail or deliver substandard performance.

China has taken steps to address semiconductor counterfeiting. China's Ministry Information Industries, China Quality Management Association for the Electronics Industry (CQAE), and the China Electronics Purchasing Association (CEPA) are sponsoring a "Reliable Electronic Component Supplier" (RECS) program. RECS will certify reliable suppliers and encourage purchasers to seek RECS suppliers. Several SIA member companies have joined RECS, but ultimately RECS will only be successful if Chinese companies embrace the concept and avoid purchases from unreliable suppliers.

While this is a positive step, this action must be coupled with effective enforcement and stiff penalties for violations. Currently the Chinese government only takes criminal enforcement actions when the amount of counterfeit goods is above a certain threshold amount, effectively giving a safe harbor for counterfeiting below the threshold amount. SIA encourages the Chinese government to eliminate the threshold, or at a minimum, substantially lower the criminal threshold for semiconductors and other intermediate goods where the damage to downstream industries is high.

The SIA also encourages China to review and enhance its IP enforcement measures including remedial measures under civil law and, where appropriate, criminal proceedings as well as make further improvements in transparency regarding enforcement efforts. The objective of the review should be to deter violations rather than allow counterfeiters to consider penalties as merely a cost of doing business.

D. Government Procurement

When China acceded to the WTO it did not join the WTO Government Procurement Agreement (GPA). It made a commitment to start negotiations for entry into the GPA "as soon as possible."

> China would become an observer to the GPA at accession and initiate negotiations for GPA membership by tabling an Appendix I offer as "soon as possible." (Working Party Report Par. 341.)

Pending Chinese entry into the GPA, Chinese government entities at the

central and sub-national level and all public entities other than those engaged exclusively in commercial activities would conduct procurement in a transparent manner; and on an MFN basis. (Par. 339.)

Procurement would be conducted only through published and publicly available laws, regulations, rulings and procedures.

With respect to state-owned enterprises, purchases by such entities for commercial sale or non-governmental purposes would be based purely on commercial considerations and WTO members would be allowed to compete for sales to the SOEs on non-discriminatory terms. (Pars. 44, 46.) Measures relating to purchases by the SOEs would not be considered measures "relating to government procurement." (Par. 47.)

In 2002 China enacted a Government Procurement Law, which among other things, directs government entities to give priority to "local" goods and services. China has subsequently issued a variety of plans and draft regulations indicating an intent to use discriminatory purchasing by government entities to promote domestic industries.

China agreed at the April 2006 JCCT to begin negotiations for accession to the GPA by December 2007. China's reluctance to move forward quickly on GPA membership appears to reflect a widespread attitude within Chinese official circles that while doing so may perhaps be an obligation over the long term, membership is ultimately not in China's best interest, and that the continued ability to practice preferential procurement is an important industrial policy tool.

> "China does not believe a highly liberal market access offer to allow wide-ranging foreign access to government procurement contracts would have a major positive impact on the country's economic growth, which has been the fastest in the world in recent years. As a result, China will probably move more cautiously, [a Chinese official] predicted."[23]

A further problem is that much of Chinese policy is now aimed at support of indigenous Chinese products (with Chinese IP and production) and appears to be designed to exclude or at least minimize reliance on foreign companies' products, whether produced abroad or in China. This is part of China's policy emphasis on indigenous innovation and moving China's manufacturing up the production chain.

A part of this process that may have more than one use is to accord special status to certain Chinese products for government procurement and key national project purposes through an accreditation procedure. The *Administrative Measures for Accreditation of National Indigenous Innovation Products* have been circulating in draft form in China since early 2007. The first in a series of policies comprising China's overall innovation agenda, the Accreditation Measures seek to establish a national

---

[23] Sept. 19, 2007, China Trade Extra.

accreditation process for products containing indigenous innovation under the umbrella of the Long Term Science and Technology Plan and the successive implementing regulations issued by the State Council. They are formulated specifically as a tool for implementing the Long Term S&T plan.

The description is as follows:

- Products submitted for accreditation shall:
  - have indigenous intellectual property rights
  - possess state-of-the art innovation;
  - [contain] advanced technology [comparable] to the international advanced level among similar products;
  - have potential economic benefits and wide market prospect or can substitute for imported merchandise.
- Accredited … products shall be given priority in procurement for government and national key projects … and related industrialization policies [in order to] support the development of indigenous innovation products.[24]

Indications are that China is considering applying this general policy of prioritizing indigenous innovation in the government procurement process to the semiconductor specifically.

The impact of the accreditation process is not yet clear. Whether a foreign firm can qualify its products by having them manufactured in China in a wholly-owned facility or in a joint venture, or having the product manufactured for it in China by a local Chinese company, is an open question.

The recent OECD Report on China's National Innovation System makes the following comment, urging that a more positive direction be adopted:

> "Integration into the WTO GPA [Government Procurement Agreement] would not just open up China's public procurement markets to foreign companies, it would . . . also provide new opportunities for Chinese companies to enter public procurement markets abroad."[25]

In its submission to the U.S. government for the 2007 JCCT meeting, the U.S. Chamber recommended that the parties "Finalize negotiations regarding accession to the WTO Government Procurement Agreement (GPA) by December 31, 2008 with coverage of governmental entities similar to that provided by other signatories with large economies."

Without an end date to the GPA negotiations, they may last for years given the Chinese government's drive to use its procurement power as an incentive to boost

---

24 Articles 4 and 2, Administrative Measures for Accreditation of National Indigenous Innovation Products, Interim draft, (undated).

25 OECD Reviews of Innovation Policy: China Synthesis Report, 2007.

domestic innovation. For the same reason, without some kind of condition to ensure adequate coverage, China's offers on proposed scope for accession may be very limited.

E. Subsidies in the Semiconductor Industry

In China's economy, the central government actively seeks to manage industrial development and subsidies remain an important way in which the government intervenes in the economy. The Chinese government has designated semiconductors as a strategic industry, set production targets for it, actively advocated import substitution, and has sponsored major developmental programs specifically intended to promote "national champions" to contest existing leadership in semiconductor manufacturing.[26] Recent government planning documents demonstrate that the semiconductor industry continues to be a high priority for Chinese government support, from the macroeconomic to the microeconomic planning level:

NDRC. In its main macroeconomic planning document for the entire Chinese economy, the National Development and Reform Commission (NDRC), the agency tasked with coordinating industrial development economy-wide, announced in 2006 that China would focus on improving the technological and competitiveness levels of its semiconductor industry.[27]

MOST. In what's been termed a blueprint for science and technology development through the year 2020, China's Ministry of Science and Technology (MOST), which coordinates long-term scientific and technological research and development in China, announced about the same time that the semiconductor industry was a priority sector and the subject of a key state project eligible for a host of government preferences as part of its National Medium and Long Term Program on Scientific and Technological Development (2006-2020).[28]

MII. In its long-term plan for science and technology development in the information industry, China's Ministry of Information Industry (MII), which fosters the development of information technology industries specifically, set precise import substitution targets for different types of semiconductors:

---

26 Chinese Premier Wen Jiabao Vows Increased Spending on Science, Technology, BBC Monitoring (January 24, 2006); "Summary of the Tenth Five Year Plan (2001-2005) -- Information Industry," Ministry of Information Industry as at http://www.trp.hku.hk/infofile/china/2002/10-5-yr-plan.pdf. "Ministry of Information Industry Vice-Minister Lou Qinjian's Speech Delivered at a Symposium Held by the Advisory Commission on the 11th Five-year Plan for the Information Industry" (June 2, 2005). For China's efforts vis-à-vis U.S. manufacturers, see "Master of Innovation? China Aims to Close Its Technology Gap with Korea and Japan," Business Week (April 14, 2003).

27 "China's Economic and Social Development Plan - I," Fourth Session of the Tenth National People's Congress, National Development and Reform Commission, March 5, 2006.

28 Outline of the National Medium-and Long-Term Programme on Scientific and Technological Development (2006-2020), State Council of the People's Republic of China February 9, 2006. A general outline of the tax and financing incentives available to priority and key state projects can be found in "Notice of the State Council Distributing Affiliated Policies Implementing the Outline of the National Medium-and Long-Term Program on Scientific and Technological Development (2006-2020)," Guo Fa [2006] No. 6, The State Council, February 26, 2006.

"[We will] significantly increase the self-sufficiency ratio to over 70 percent for integrated circuits used for information and national defense security, and to over 30 percent for integrated circuits used in communications and digital household appliances."[29]

While these government pronouncements are articulated in very general terms, they are implemented in very tangible ways. Chinese government support to industry, and to semiconductor industry development in particular, can take many forms, but one example of government subsidization of domestic semiconductor firms deserves special notice.[30] Semiconductor Manufacturing International Corp. (SMIC), whose largest single shareholder was a subsidiary of the Shanghai municipal government in 2006 and is considered China's "national champion" in semiconductor manufacturing, enjoys a number of benefits, many of which may seem familiar to observers of industrial policy: a preferential electricity supply, income, sales, and enterprise tax exemptions or reductions, exemptions from customs duties and import-linked VAT for equipment imports and construction materials, "gratuitous aid" for research and development, "interest-free" and reduced interest borrowing, and land-use subsidies.[31]

While these types of subsidies may be seen in other areas of China's economy, more unusual are the management fees and special profit-sharing and equipment sales arrangements SMIC receives as a result of agreements it has with two local governments in China, Wuhan and Chengdu. In 2006, SMIC concluded management agreements with government entities in Hubei and Sichuan provinces to operate 12-inch and 8-inch fabs in those jurisdictions, respectively. SMIC manages the fabs, which the local governments own in the short-run, but reportedly has an option to buy them in the longer term "without paying interest."[32]

SMIC CEO Richard Chang has described these fab arrangements and how they help SMIC grow without assuming debt and in order to meet its capital expenditure requirements.[33] SMIC receives a management fee in conjunction with the agreement that

---

29 Outline of the 11th Five-Year Plan and Medium-and-Long-Term Plan for 2020 for Science and Technology Development in the Information Industry, Ministry of Information Industry, Xin Bu Ke [2006] No. 309, August 29, 2006.

30 Chinese Economic Planning and the Role of Subsidies, Usha C. V. Haley, PhD, Testimony, Hearing on China's WTO Compliance and Industrial Subsidies, U.S.-China Economic and Security Review Commission, April 4. 2006.

31 Semiconductor Manufacturing International Corporation Form 20-F for the Period Ending December 31, 2006, Semiconductor Manufacturing International Corporation, pp. 31, 33, 34, 48, 70, F-14, F-15, F-35, F-36. High-tech Lows, Economist Intelligence Unit (November 21, 2005); Godson Chip Industry to Speed Up, SinoCast China IT Watch (January 3, 2006); Startup Crafts China's First 64-bit MPU, Electronic Engineering Times (March 10, 2003).

32 "Semiconductor Manufacturing International Q1 2006 Earnings Conference Call," April 27, 2006; "Zhang Rujing Use Government Investment to Find Overspeed Path for SMIC," CEO & CIO China, July 20, 2006; "12 Inch Line Develops in the Middle, Profit is Challenged," China Electronics News, July 11, 2006.

33 "Semiconductor Manufacturing International Q1 2006 Earnings Conference Call," April 27, 2006; "Zhang Rujing Use Government Investment to Find Overspeed Path for SMIC," CEO & CIO China, July 20, 2006; "12 Inch Line Develops in the Middle, Profit is Challenged," China Electronics News, July 11, 2006.

is typically 3.2 percent of total revenue at the fabs.[34] In addition, SMIC shares in the profits of the fabs, when generated.[35] (This is expected to begin in late 2007 and early 2008.) Finally, SMIC has sold semiconductor manufacturing equipment to the government for use in the fabs and in conjunction with its management of them, and has reportedly booked $100 million in receivables on its 2007 balance sheet reflecting such sales, according to investment analysts.[36] Equipment sales were likewise made to the government in 2006, for which SMIC charged approximately $77 million for equipment that had a carrying value of approximately $34 million.[37] In addition, the fabs themselves are receiving bank loans, that are by definition "policy loans," including approximately $887 million (RMB 6.8 billion) announced by the China Development Bank this year to finance construction of the government-owned but SMIC-run manufacturing facilities.[38]

The highest profile industry-wide subsidy for domestic Chinese semiconductor producers was the discriminatory value added tax rebate system, a measure which China rescinded after it was challenged by the United States government as WTO-inconsistent. The U.S. Trade Representative has announced that it will monitor for any replacement measures. While some subsidy measures can, as noted, prove to be problematic and run counter to a country's WTO commitments, the fact is that locational subsidies are the rule not the exception in many areas of the world. China and its political subdivisions are far from being alone in offering inducements to attract investment.

F. Tax Policy

China, like many regions around the world, offers generous tax benefits when companies open factories in China. For semiconductor manufacturing facilities, these benefits have included a tax holiday for 5 years, followed by 5 years at half the normal tax rate. Local governments often offer additional benefits such as rent free land. The total benefit package in China is not necessarily superior to those of other foreign countries, however.

The effect of such tax policies is substantial. SIA has estimated that the cost to build and operate a 300mm wafer fabrication facility over a ten year period is from $6.7B to $6.8B in the U.S., compared to $5.6B to $6.1B outside the U.S. – a difference of up to $1.1 billion. This is a conservative estimate as future cash flows are discounted using a Net Present Cost (NPC) analysis. Without discounting, the differential is from $2.4-3.1

---

34 Q 2 2007 Semiconductor Manufacturing International Corp. (SMIC) Earnings Conference Call- Final, FD Wire, July 26, 2007, p. 5.

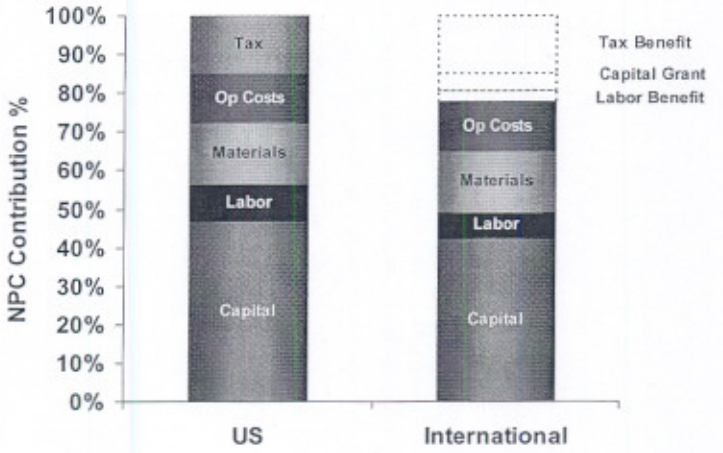
35 Q 2 2007 Semiconductor Manufacturing International Corp. (SMIC) Earnings Conference Call- Final, FD Wire, July 26, 2007, p. 6.

36 Q 2 2007 Semiconductor Manufacturing International Corp. (SMIC) Earnings Conference Call- Final, FD Wire, July 26, 2007, p. 7.

37 Semiconductor Manufacturing International Corporation Form 20-F for the Period Ending December 31, 2006, Semiconductor Manufacturing International Corporation, p. 48.

38 "Smic's 12-Inch Foundry in Wuhan Obtains Loan of 6.8 Billion Yuan," Xinhua News Agency, June 25, 2007. A January-September 2007 yuan-dollar exchange rate was used.

billion over 10 years, or about $1 billion over 4 years. About 70 percent of the cost difference is due to tax benefits, 20 percent due to capital grants, and only 10 percent due to lower labor costs. Operating costs such as lower utility costs or cheaper logistics are also slightly lower overseas.



While it is commonly believed that the U.S. is at a disadvantage due to higher labor costs, the above analysis makes clear that it is government policy and not normal economic forces that has the greatest impact on the cost differential. While there is a growing recognition that U.S. competitiveness is hurt by the U.S.'s high tax rate, second highest among OECD countries, the effect of overseas incentives is not widely known. SIA supports the U.S. Federal government in developing an effective response to the significant tax benefits offered outside the U.S. if it is to remain a competitive location of semiconductor manufacturing.

It is important to recognize that these tax benefits often also apply for research, development, and design centers.

III. What Is Needed in Terms of US Policy

SIA supports public policies that spur free competition and economic growth. SIA also promotes policies that recognize the importance of semiconductors and advanced technology in an increasingly broad array of product lines - from PCs, advanced communication networks and sophisticated automotive systems, to medical devices and state-of-the art weapons systems.

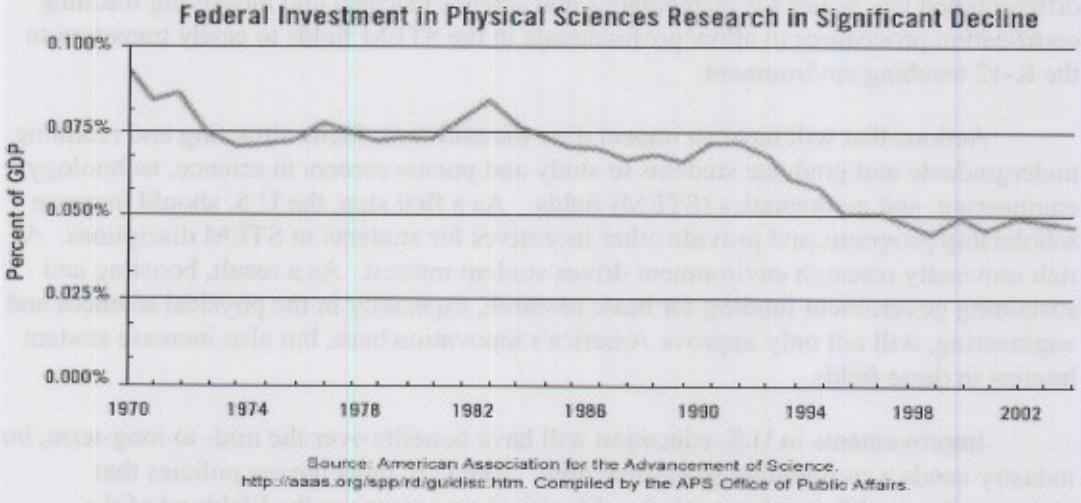
In its report, "Rising Above the Gathering Storm," the National Academies stated that "We fear the abruptness with which a lead in science and technology can be lost—and the difficulty of recovering a lead once lost, if indeed it can be regained at all." Maintaining U.S. leadership in semiconductors will take a concerted effort to fund basic research in our universities, build a workforce for the 21st century through a commitment to excellence in education and welcoming the world's brightest. In addition we must have a business climate that encourages investment and supports risk-taking.

A. U.S. Semiconductor Industry and Innovation Leadership

Basic research conducted at America's universities and the chip industry's significant investments in commercialization have made it possible for American semiconductor companies to maintain world leadership with a market share of nearly 50 percent. But other countries are seeking to replicate the U.S. economic model and attain our level of prosperity by investing heavily in basic research, training highly skilled scientists and engineers, and offering tax incentives and subsidies to attract investment.

Research is the foundation for innovation. For the past forty years the chip industry has been making faster, more powerful and ultimately less expensive semiconductors. U.S. chipmakers invest more than 15 percent of sales back into R&D, among the highest of any industry. The resulting growth in computing capacity has made the information revolution possible. But, to continue to deliver these technological advances, significant research hurdles must be overcome as the current 30-year old semiconductor process reaches its physical limits around 2020. Seminal research papers usually appear 12 to 15 years before commercialization, so breakthrough discoveries are needed within the next few years if a replacement technology is to be available by 2020.

While individual companies have and will continue to fund near-term commercial research, a different approach is need for longer-term efforts. Basic scientific discovery is beyond the capacity of any single firm or even united industry- Government investment in basic research, increased government funding is imperative for the continuation of America's innovation leadership, competitiveness and national security. In particular, basic research findings in physical sciences, engineering, and mathematics hold the potential to drive productivity gains and growth across all sectors of our economy. Yet, federal investment in these key areas has been relatively flat or declining over the past 30 years.



SIA supports the House Democratic Innovation Agenda and President Bush's American Competitiveness Initiative proposal to double Federal basic research in the physical sciences and engineering at the National Science Foundation (NSF), National Institute of Standards and Technology (NIST), and Department of Energy's Office of Science. Nanotechnology research at these agencies, such as the Nanoelectronics Research Initiative (NRI) within the NSF and the Center for Nanoscale Science and Technology at NIST, will lead to discoveries that will allow industry to continue to shrink the size of electronic circuits. SIA also urges a Congressional appropriation of $20 million for the Defense Department to fund the Focus Center Research Program. Industry will provide a dollar for dollar match to allow the Focus Center Research Program to fund semiconductor research at 38 universities across the country.

B. Building a 21st Century Workforce

Ensuring that America remains competitive requires actions that will bear fruit in twenty years as well as tomorrow. The business community stands ready to do its part, and many SIA members work hard in their communities to strengthen math and science education for American students. However, too few American students are pursuing studies in science, technology, engineering and math fields. This waning interest needs to be addressed at all stages of the pipeline, from K-12 through university and graduate-level. Public policy leadership is required if the United States is to be successful.

The long term solution to the workforce challenge is for America to upgrade K-12 mathematics and science teaching and improve the proficiency of all students in math and science. The Administration's American Competitiveness Initiative proposals for MathNow programs for elementary and middle school and the AP/IB incentive programs for high school will be critical to ensuring students have the fundamental skills in these areas. Additional ways to accomplish this goal include enhancing loan forgiveness programs for professionals with science, technical, engineering and mathematics degrees (STEM) who pursue K-12 teaching careers. Other options would be creating differentiated pay scales for mathematics and science teachers and modifying teaching certification procedures to allow professionals in the STEM fields to easily transition to the K-12 teaching environment.

Actions that will have an impact over the mid-term focus attracting and retaining undergraduate and graduate students to study and pursue careers in science, technology, engineering, and mathematics (STEM) fields. As a first step, the U.S. should increase scholarship programs and provide other incentives for students in STEM disciplines. A rich university research environment drives student interest. As a result, boosting and sustaining government funding for basic research, especially in the physical sciences and engineering, will not only improve America's innovation base, but also increase student interest in these fields.

Improvements in U.S. education will have benefits over the mid- to long-term, but industry needs a competitive workforce now. The U.S. must pursue policies that welcome the world's brightest minds. Electrical engineers are the lifeblood of the semiconductor industry. Over half the masters degrees and two-thirds of the PhDs

awarded by U.S. universities in electrical engineering are to foreign nationals. Chip companies must have access to this talent. These individuals have the potential to play key roles in creating opportunities for domestic employment. Semiconductor companies hire very few individuals under the H-1B program and almost all become permanent residents. Yet, they are critical to our competitiveness. U.S. government policies must be changed to enable the United States to attract and retain the most gifted science, STEM students from around the world to study for advanced degrees and stay to work in the United States. Students graduating from U.S. universities with STEM degrees should have streamlined access to green cards. In addition, we must embrace policies that recognize this nation's history as a magnet for innovators from around the globe. Talent is worldwide. We must never close our doors to it.

C. Welcoming Investment

America is the world's most dynamic and productive economy because innovation drives high productivity. Productivity, in turn, allows Americans to earn high wages and maintain a high standard of living. Investment in innovation spurs growth throughout the economy.

High technology research and manufacturing foster creativity and entrepreneurship in the universities, businesses and communities where these activities occur. The strategic application of many new technologies makes maintaining a critical mass of innovation research and manufacturing in the U.S. also an urgent national security concern.

The Defense Science Board Task Force on High Performance Microchip Supply issued a report on U.S. semiconductor capabilities for national security needs in which it stated: "A coherent U.S. policy response is necessary to counter the extensive intervention by foreign governments to encourage local investment in the semiconductor industry. The response will require government policies that offset foreign incentives for manufacturing investment."[39]

Creating an environment that welcomes innovation investment is critical to America's competitiveness. Other nations have recognized the strategic importance of the high technology sector, and in particular, the semiconductor industry. Often, America's competitors offer rich incentive packages to attract innovation research and manufacturing to their shores. Tax holidays, subsidies, accelerated depreciation, low interest loans and training grants are among the many incentives nations ranging from Germany to China make available to chip makers. The U.S. must level the playing field.

At a minimum, predictability of the Federal R&D Tax Credit must be addressed. Created in 1981, this program has faced expiration and been extended 12 times. Making the R&D Tax Credit permanent would contribute to its effectiveness as an incentive for innovation research. Similarly, increasing the rates for the Alternative Incremental Credit

---

[39] Defense Science Board Task Force on High Performance Microchip Supply, February 2005, p. 59.

and enacting the Alternative Simplified Credit would allow companies currently not eligible for the credit to participate in this innovation incentive program.

The R&D tax credit serves as a crucial driver of R&D investment location decisions. In an increasingly competitive global environment – with foreign governments actively recruiting American companies to base research operations abroad – the credit helps make the United States a more attractive location to base R&D. Federal R&D Tax Credit reform would be an effective first step to increasing domestic incentives for innovation investment.

D. Trade Policy

China like other major trading countries, including the United States, is seeing and negotiating regional free trade agreements. Most countries state a preference for multilateral trade liberalization and a system of multilateral trading rules. SIA strongly supports a positive outcome of the Doha Round, and has stated its negotiating priorities in Geneva as well as in Washington DC and foreign capitals. A concern in the context of Asia is that Asian nations will see it in their interests, especially with Doha not progressing, to enter into a Pan-Asian free trade agreement (FTA). Given preferential rules of origin -- which are the essence of an FTA, the likelihood is that a discriminatory, trade-diverting production network would be set up, to the detriment of the participation of SIA's members who continue to fabricate (diffuse) semiconductors in the United States. This would occur if electronic subassemblies only qualified for duty-free entry into China if they included high Asian content. As semiconductors often make up a high value of any subassembly, preferential rules of origin might effectively preclude U.S. chips from inclusion in final products assembled in China. This is one reason why a free trade agreement among APEC members, including the U.S., makes sense. This is especially true because regrettably the WTO is unlikely to make sufficient progress in multilateral trade liberalization to supplant regional free trade agreements.

IV. Conclusion

SIA sees many opportunities for fruitful cooperation between the U.S. and Chinese industries, and the United States and China, with respect to policies affecting semiconductors. We can work together for duty-free treatment for all new semiconductor products through international agreements, and for elimination of tariffs on electronics products in the Doha Round of Multilateral Trade Negotiations. We can collaborate on joint environmental goals, reducing the use of energy and chemicals that although used in small quantities should be replaced as technology permits, as well as striving constantly to reduce waste products. The industry has a great record in improving the quality of life and economic development worldwide. This year, with China joining other producing regions in the World Semiconductor Council and in the Governments/Authorities Meeting on Semiconductors, the opportunities for cooperation to foster these common goals has increased enormously. We look forward to a strong harmonious relationship with the Chinese industry and to our two governments working together to adopt policies conducive to our shared objectives.

Annex A

China's New Antimonopoly Law

Synopsis of the new law. China's Antimonopoly Law was enacted August 30, 2007 and becomes effective on August 1, 2008. The law governs "monopolistic conduct" in China and outside of China to the extent that such conduct "eliminates or restricts competition in China. "Monopolistic conduct -- can take three forms:

Monopoly agreements between undertakings
Abuse of a dominant market position by undertakings
Concentrations (mergers and acquisitions) that eliminate or restrict competition.

These three forms of "monopolistic conduct" are prohibited unless an exemption is provided in the AML. Violations are subject to civil penalties. There is no criminal liability under the AML.

Antimonopoly Policy and China's Economic Reform. In 1978 China's leaders launched the country on a program of long run economic reform, emphasizing the introduction of market-based principles, enterprise autonomy, private ownership, and entrepreneurialism. Prior to reform, although government-owned and run factories and other economic units competed to achieve production quotas and other goals set by central planners, profit-driven competition between enterprises for markets was virtually unknown. At present, three decades later, in many areas of the economy, a dynamic private sector has emerged. Competition between enterprises has not only become widespread, but has frequently taken on an intensity that has lead Chinese observers to characterize it as "malignant," "malicious," and "excessive." In 1993 China adopted an Anti-Unfair Competition Law to place curbs on certain kinds of competitive excesses, such as deceptive advertising, coercive sales, appropriation of business secrets, and bribery. The fact that China's leadership sees the need for Antimonopoly legislation is a testament to the success of the longstanding effort to introduce market principles to China's economy.

The drafting process. China's State Council called for enactment of antimonopoly legislation in the late 1980s, and drafting of what was to become the Antimonopoly Law began in 1994. The Ministry of Commerce (MOFCOM) emerged as the principal drafting agency, although many other governmental organizations were consulted. The officials involved in the drafting also consulted extensively with foreign competition officials, academics, attorneys, and business executives. The U.S. Department of Justice, the Federal Trade Commission, the American Bar Association, the U.S. Chamber of Commerce, and other U.S. organizations reviewed and commented on various drafts of the AML and held a series of legal exchanges and conferences with Chinese officials involved in the drafting process. The Chinese government also consulted with public and private sector experts in the European Union, Japan and Korea. It is widely believed that these extensive consultations resulted in substantial improvements in the law that was ultimately enacted, and increased sophistication with

respect to competition policy issues by the Chinese officials engaged in this process. The Chinese government is to be applauded on the degree of outreach in which it engaged in the process of crafting its law, and the transparency of its drafting process. In this, it was the equal or better of any other major trading country.

Divergent international perspectives on the proper role of competition policy. Since the advent of economic reform, China has taken many major steps to increase its integration into the global economy, including accession to the World Trade Organization in 2001 and participation in other multilateral economic institutions. These moves have proven beneficial both to China and to the world trading system. Enactment of antimonopoly legislation is potentially another such positive step. However in contrast to many government economic policy measures which are regulated by WTO agreements based on the consensus of the WTO members, competition policy is not covered by WTO rules because the necessary consensus of a competition policy agreement has never been proven achievable. Significant variances exist in the competition laws of major industrialized countries reflecting differing perspectives on the purposes that such laws are expected to achieve. There is a general agreement that certain so-called "hard core" anticompetitive practices should be prohibited, such as price fixing, bid-rigging and other similar forms of cartel-like conduct, and virtually every country with competition laws prohibits such activity. China's AML specific prohibitions on various forms of monopoly agreements between undertakings are in line with this international consensus.[40]

Lack of consensus exists, however, with respect to other basic issues. U.S. antitrust policy is enforced to protect "competition not competitors" and is enforced with the sole objective of maximizing consumer benefits by promoting economic efficiency. This means that even if a large firm competes so vigorously that it drives all other firms out of the market and achieves a monopoly, no illegality will be found unless the firm takes actions which have no economic rationale other than to exclude competition and maintain its monopoly position. A number of other countries take the position, however, that when a company achieves a certain size and market share it becomes "dominant," and that its competitive efforts should be subject to heightened regulatory scrutiny. A number of commercial practices that would be considered unobjectionable if employed by smaller firms may be deemed "abuse of a dominant position" if utilized by a "dominant" entity. As former and current U.S. antitrust officials point out, however, complaints about abuse-of-dominance often arise from competitors hoping to secure the assistance of competition authorities in reducing competitive pressure on themselves and/or in place regulatory constraints on more efficient rivals.

Purpose of the law. Earlier versions of the AML stated that the purpose of the law includes "protecting the legitimate rights and interests of *undertakings*, consumers and public interest, and promoting healthy development of the socialist market economy." (emphasis added) The law as enacted eliminates protection of "undertakings" as a purpose of the law, and that change, standing alone, could be seen as a positive

[40] AML Articles 13-17 correspond in a general way with Section 1 of the U.S. Sherman Antitrust Act and Article 81 of the EC Treaty.

indication that China is aligning more closely with U.S. practice which holds that the purpose of the antitrust laws is to protect "competition not competitors." However, other parts of the law are indicative that notwithstanding this change in Article 1, the AML is still likely to be applied to protect one group of producers against another in order to further industrial policy objectives. The prohibition on "dominant" undertakings "buying products at unfairly low prices" (Article 16(i)) seems intended only to protect undertakings, not consumers. Similarly the exemption from the prohibition on monopoly agreements "for the purpose of mitigating severe decrease of sales volume or excessive stocks in economic recessions" (Article 15(v)) can only benefit undertakings and is actually disadvantageous to consumers.

Relevant market. Article 12 provides that the term "relevant market in this Law refers to the commodity scope and regional area within which the undertakings compete against each other during a certain period of time for specific commodities and services." Given this broad language it is difficult to ascertain how closely China will follow the methodology of the U.S. and other countries in determining relevant product and geographic markets.

Dominant market position. Article 18 establishes some broad parameters for use in determining whether an undertaking has a dominant market position, including market share, "competitive status," and "financial and technical status." One parameter for determining dominance is "the degree of difficulty for other undertakings to enter the relevant market" (Article 18 (v)). Similarly, Article 17 defines "dominant market position" as a market position held by undertakings "that can control the price or quantity of products or other transaction conditions by the relevant market *or can block the access of other undertakings to the relevant market."* (emphasis added) U.S. antitrust officials have expressed concern that such provisions could be applied to a situation in which a U.S. multinational holding proprietary technology refuses to transfer it, thus "blocking access" or making it very "difficult" (e.g. impossible) for other undertakings to enter that product market. Another parameter for determining dominance, "the extent of the reliance on the undertakings during transactions by other undertakings" (Article 18 (iv)) could be applied to the same set of circumstances and a wide range of other situations in which Chinese enterprises must "rely" on technology and technical support from U.S. multinationals holding proprietary technology.

Article 19 establishes an arithmetic formula for use in determining whether undertakings hold a dominant market position. Dominance can be "constructed" (inferred) if the market share of one undertaking accounts for 1/2 of the relevant market, the joint market share of two undertakings amounts to 2/3 of the relevant market, or the joint market share of three undertakings amounts to 3/4 of the relevant market. The numerical formula could result in an inference of dominance even in highly competitive markets to which no undertaking has market power. The law provides that "undertakings that are "constructed" to have a dominant market position shall not be considered to have a dominant market position provided that there is opposite evidence," indicating that the inference of dominance is rebuttable. U.S. antitrust enforcement agencies do not believe that presumptions of monopoly power based on market share alone are appropriate or helpful, given the unique factors that characterize different product markets. The concept

of collective "dominance" by two or three enterprises has no parallel in U.S. antitrust doctrine and has been criticized as lacking an economic rationale.

Abuse of dominant position. Prohibited "abuses" of a dominant position are itemized in Article 17 of the Law. The proscribed forms of conduct are defined in sweeping and general terms and could be applied to a wide range of what are regarded as normal, legitimate commercial practices it the United States:

> "Selling products at unfairly high prices or buying products at unfairly low prices" (Article 17(i)). This proscription could be applied to IP licensing fees that are deemed "too high." It could be applied to inhibit normal pricing practices commonly found in a competitive market, such as the use of bulk purchasing power to bargain for lower prices or charging premium prices for products for which demand is strong.
>
> "Refusing to trade with relative trading parties without any justification" (Article 17(iii)). This proscription could be applied to refusals to license proprietary technologies, and to any situation in which an undertaking decides it does not wish to enter into a commercial relationship with another undertaking, whether with respect to R&D distribution, sales joint manufacturing, or cross-licensing of technology. A specific example given by the State Administration of Industry and Commerce (SAIC) in 2004 of this type of "abuse" was a U.S. multinational, the largest manufacturer of network equipment in the world, which was not willing to authorize any other company to use its private protocols for which it owned patent rights or business secrets.
>
> "Implementing tie-in sales without any justification, or imposing other unreasonable trading terms" (Article 17(v)). Interpreted most broadly this provision could be applied to virtually any sale of a product line which combines multiple functions and products.
>
> "Limiting relative trading parties to conduct deals exclusively with them or designated parties without any justification" (Article 17(iv)). This prohibition could be applied to a wide variety of commercial practices, such as exclusive distribution arrangements and cross-licensing technology.
>
> "Applying discriminating treatment on prices or other transaction terms to relative trading partners with equal standing without any justification" (Article 17(vi)). The 2004 SAIC survey explicitly references invoking this provision against multinationals that price their products differently in various geographic markets around the world.
>
> "Other activities that abuse the dominant market position as recognized by the Antimonopoly Enforcement Authority." (Article 17(vii)). This catchall language vests the enforcement authority with discretion to

identify other commercial practices which are to be deemed "abusive."

In 2006 Gerald F. Massoudi, Deputy Assistant Attorney General in the Antitrust Division of the U.S. Department of Justice, reviewed the practices defined as "abuses" by China's then-draft AML. He states that

> "Refusals to deal, exclusive dealing, tying and price discrimination all can be used for pro-competitive, efficiency-enhancing reasons and in only very limited circumstances will have anticompetitive effects, even when used by a firm with a dominant market position. Indeed, practices such as these are very common in highly competitive markets, reflecting that such distribution methods can reduce costs and improve efficiency. Therefore, it is important that these practices not be presumed to be anticompetitive, either in the law or by the antimonopoly enforcement agency in implementing the law. These practices should be viewed as unlawful only if, after a detailed analysis of the conduct, the market, and proffered business justifications, it is determined that the conduct harms competition by creating, maintaining or strengthening the monopoly power of the dominant firm and that the conduct makes economic sense to the firm only because of its anticompetitive effects."[41]

Intellectual property rights. Article 55 of the Law provides that the law is "not applicable to conducts [sic] by undertakings to protect their legitimate intellectual property rights in accordance with IP law and relevant administrative regulations." However, it states that "this law is applicable to the conducts [sic] by undertakings to eliminate or restrict market competition by abusing intellectual property rights stipulated in IP law and administrative regulations." "Abuse" of IP is not further defined but the provisions of Article 17 itemizing the forms of "abuse of a dominant position" include (i) "selling at unfairly high" prices, which could be applied to IP licensing fees, and (iii) "refusing to trade with relative trading parties without any justification," which could be applied to instances of refusal of an IP holder to license proprietary technologies to competitors.

State-owned enterprises. Article 7 of the Law provides that "Industries controlled by the State-owned economy… shall be protected by the State for the lawful operation of undertakings." The "State shall supervise and control the price of commodity and service provided by these undertakings to protect the interest of consumers and facilitate technical progress." SOEs are directed to "be self-disciplined" and not "impair the interests of consumers by the controlling position or exclusive dealing position." This provision appears to contemplate a continuation of the practice of government-administered pricing in the SOE-dominated sectors. It is unclear from this provision whether SOEs are subject to, exempt from, or partially subject to the AML. They are not included in the list of exemptions expressly set forth in Article 15. Article 7 states that SOEs shall operate "in accordance with the law," but it is not clear whether this is a

---

41 Gerald F. Massoudi, "Key Issues Regarding China's Antimonopoly Legislation," (Presented to the International Seminar on Review of the Antimonopoly Law, Hangzhou, China, May 19, 2006).

reference to the AML, to the industry-specific laws that commonly govern SOE-dominated sectors (Energy Law, Insurance Law, Air Law, Telecommunications Law, Electricity Law, etc.) or to both the AML and such other laws.

Read together with the remainder of the Law, Article 7 suggests that there will be, in effect, two competition policy regimes -- one characterized by government oversight and regulation of enterprise behavior pursuant to the AML and the other by direct government administration of pricing and enterprise conduct in SOE-dominated sectors pursuant to Article 7 and industry-specific laws. It is entirely possible that the SOE-dominated sectors will be subject to more lenient treatment under the AML than those sectors in which foreign enterprises play a more important role. The SOEs will remain free to form buyers' cartels and engage in other forms of monopsonistic conduct designed to enhance their market power when negotiating transaction terms with multinational vendors. The multinationals, on the other hand, given their scale and technological strength may confront "abuse of dominance" charges under the AML.

M&A thresholds. The final version of the AML eliminates the controversial statutory thresholds stipulating when a prior notification of a merger or acquisition is required. Article 20 simply states that notification will be required pursuant to a "standard of notification" to be stipulated by the State Council. This defers but does not eliminate concerns that the thresholds will be set too low, giving rise to burdensome notification requirements for foreign multinationals who are active in acquiring firms around the world.

Trade associations. Article 11 of the Law provides that "The Trade Associations shall strengthen the self-disciplinary work of the industries to lead the undertaking to compete according to the law and protect the order of market competition."

It is unclear whether this provision is intended to encourage industry associations to undertake actions which protect consumers or whether it contemplates a role for the associations in maintaining "market order" and restricting competition. Article 16 of the Law states that trade associations "shall not organize the undertakings in the industry to be engaged in monopolistic conducts [sic] prohibited by [Chapter II Monopoly Agreements]," and Article 46 provides for the levying of fines and revocation of registration with respect to violations by trade associations. However as noted, Article 15 of Chapter II exempts many forms of collective activity from the general prohibition or monopoly agreements, including recession cartels. Since the 1990s trade associations, encouraged by the government, have played a major role in facilitating industry-wide price stabilization measures, and this provision suggests that notwithstanding enactment of the AML they will continue to play such a role. This perspective finds support in State Council Notice No. 36 of May 13, 2007, *Opinions of the General Office of the State Council as Accelerating the Promotion of Reform and Development of Industrial Associations and Chamber of Commerce*, which directs industry associations to form into bodies conducting "market supervision," to formulate and enforce "good behavior rules," to implement "control systems for industry self-discipline," and to "maintain a market environment for fair competition."

Many of China's trade associations evolved out of the old *you guan bumen* ("departments-in-charge"), are staffed with former ministry officials, and play an important role in carrying out sectoral government policies. This provision, like Article 7 regarding SOEs, appears to contemplate a continuing government administrative role with respect to enterprise decisions on matters such as pricing and output levels.

In Japan since the 1960s industry groups were able to secure legal authority from the Fair Trade Commission (JFTC) to draw up "Fair Trade Codes" for their sectors, enforced by "Fair Trade Councils," usually coextensive with the industry trade associations. The Fair Trade Codes were drawn up by members of the Councils listing various forms of prohibited business conduct, and were enforceable against "outsiders" (nonmembers). Ostensibly the purpose of the Codes was to protect consumers but most complaints were actually brought by Council members against competitors for aggressive sales and promotion efforts, including advertising campaigns, promotional offers, giveaways, lotteries, and bundled prizes -- all of which benefit consumers but "disrupt the market order." (The law authorizing establishing the Codes was originally enacted to prevent "mammoth foreign capital" from using sophisticated marketing techniques to achieve dominance.) The promotional effect of the Codes and Councils was to maintain the competitive *status quo* and inhibit marketing initiatives by innovative firms which were not "members of the club." Although price discounting itself is usually not proscribed by the Codes, discounting firms were often singled out for aggressive enforcement by the Councils.

Article 11 of the AML could foster the spread of similar arrangements in China. Of particular concern would be any initiative by domestic competitors in the various IT product sectors in which a foreign firm competes to draw up self-disciplinary rules for those sectors that prohibit marketing methods the foreign company uses at present and would like to use in the future.

Administrative monopolies. Articles 8 and 32-37 establish constraints on anticompetitive acts by administrative authorities and "organizations authorized with administrative powers of public affairs by laws and regulations." The language regarding organizations vested with administrative power was added in the final version of the AML and presumably would encompass trade associations, standards-setting working groups, and other nonstate actors vested with delegated regulatory authority. Because of the substantial potential for anticompetitive, restrictive and nontransparent actions by such quasi-public entities, this change represents an improvement over earlier drafts.

However the sections governing administrative monopolies consist entirely of a listing of prohibited actions. These are no specific penalties established for violation of the prohibitions. Article 51 simply provides that administrative agencies and organizations vested with authority that commit abuses "shall be admonished by the superior authorities," and that "individuals who are directly responsible shall be punished in accordance with law." No procedures are established for parties that are adversely affected by the abuse of administrative powers to seek relief. Thus it is unclear what effect these new safeguards will actually have in the market.

Exemptions. Article 15 provides for exemptions from the prohibition on monopoly agreements (Articles 13 and 14) "for the purpose of mitigating severe decrease of sales volume or excessive overstocks in economic recessions" (Article 15(v)). This exemption appears to permit price stabilization agreements and joint production and curtailment agreements during recessions. The Law also provides for exemptions "for the purpose of protecting the legitimate interests of international trade and foreign economic cooperation," (Article 15 (vi)). This could be used to justify Chinese enterprises' participation in international cartels, "gentlemen's agreements" with foreign firms and various international market stabilization schemes. By apparently permitting what are arguably the most common types of cartel agreements, Article 15 significantly weakens the pro-competitive potential of the new law.

National security review. Article 31 provides that with respect to acquisition of domestic undertakings by "foreign capital" as well as "other circumstances involving the concentration of foreign capital," if "national security is concerned an examination shall be conducted "according to the relevant regulations of the State." This provision contemplates a security-related policy review of acquisitions comparable to the scrutiny given inward foreign investment in the U.S. by the Committee as Foreign Investment in the United Sates (CFIUS). The addition of this Article to the AML has created some confusion to the effect that a new national security review process has been created. As a practical matter such review occurs already with respect to FDI, and transactions with national security implications which will apparently continued under separate procedures as before.

Enforcement. The Law provides for the establishment of two enforcement organizations. An "Anti-Monopoly Committee Under the State Council" is given a mandate to formulate competition policy, assess competitive conditions in the market, promulgate antimonopoly guidelines, and coordinate enforcement effort (Article 9). An "Antimonopoly Enforcement Authority" is trusted with enforcing the law directly or through delegation of authority to regional and local governments. The reason for the bifurcation of what are essentially "line" and "headquarters" functions into two distinct organizations is not clear and the manner in which these two entities will or will not be able to work together effectively remains to be seen.

The June 2007 draft of AML provided that the Antimonopoly Committee under the State Council would have authority, among other things, for the "handling of important antimonopoly cases." The final version of the law deletes this provision. To the extent that the vesting of authority for enforcement of key cases in a body directly subordinated to the State Council might have politicized the handling of cases, this could be a positive change.

Article 9(iv) provides that one of the Antimonopoly Committee's tasks will be "Coordinating the anti-monopoly administrative enforcement work." It can be inferred from this language that more than one agency will be involved in AML enforcement. A major merger, for example, in an SOE-dominated sector administered by an industry ministry would engage the jurisdiction of that ministry, the AML Enforcement Authority,

and perhaps other agencies, with no clear statutory guidance as to which agency was ultimately responsible for approval.

Article 10 of the Law states that the Antimonopoly Law Enforcement Authority "if appropriate, may empower corresponding government agencies at the provincial autonomous region, and municipal level to be responsible for antimonopoly enforcement activities in accordance with this Law." While it is not known whether and to what extent this provision will be given effect, the prospect that AML enforcement authority might be delegated to regional and local government officials with no grounding in competition law or economics could be harmful. It could result in inappropriate AML enforcement actions by local authorities against foreign firms, influence over AML enforcement by local industry, inconsistent legal rulings in different regional jurisdictions, and other problems.

Penalties. Under Article 47, an enterprise which has been found to have abused a dominant market position is subject to a cease-and-desist order, confiscation of "illegal gains," and imposition of fines "from 1% to 10% of sales volume in the relevant market from the previous year. Under Article 46, undertakings that implement prohibited monopoly agreements are subject to the same penalties with several caveats (mitigation of penalties if the agreement has not been implemented and/or if the undertaking "provides important evidence.") In both cases the size of the fine is to be determined with reference to "the nature, extent and duration of the illegal act." Under Article 48, an undertaking which has implemented a concentration in violation of the AML is subject to a divestiture order, a directive "to correct the situation," and fines of up to 500,000 RMB. There are no criminal penalties for companies or executives found to have violated Articles 46-48.

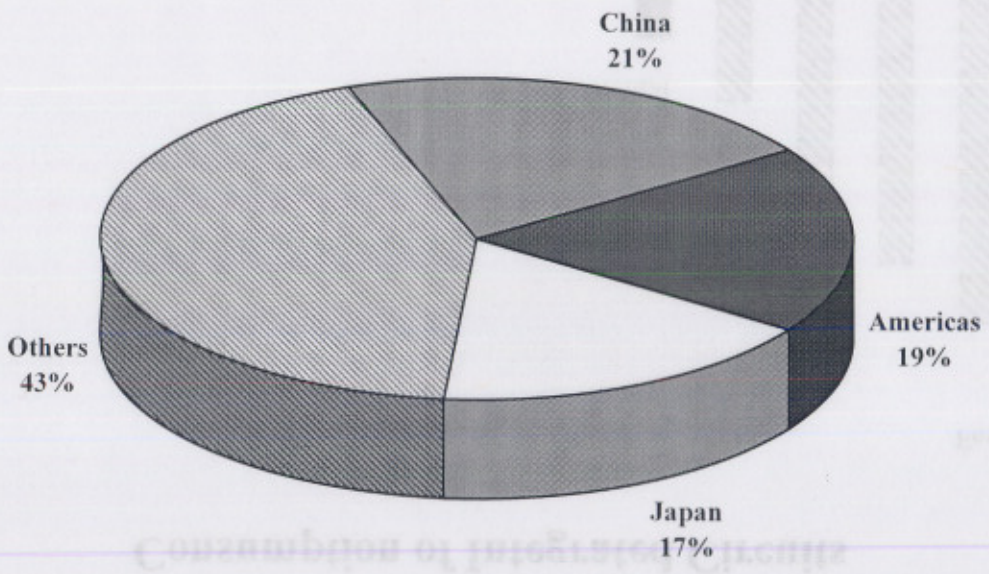
V. Conclusion

It is to be hoped that the AML as enacted will promote greater play of market forces in the Chinese economy. While segments of the Chinese economy in which less competition may be present, such as SOEs are not subject to the law, in the area of the Chinese economy which has proven most robust, that is, where significant levels of foreign investment have been permitted, the most technologically advanced and successful enterprises will be exposed to enforcement against abuse-of-dominance actions. In the worst case, foreign enterprises found to have abused a dominant position by withholding proprietary technology might confront cease-and-desist orders under Article 47 directing them to transfer IPR and technology to Chinese competitors. The fact that AML enforcement authority may be dispersed to regional and local governments through delegation of authority simply increases the level of risk for large, successful firms.

Chinese policymakers should be encouraged to clarify ambiguities prior to the effective date of the AML in August 2008, and to take an initial "go slow approach" in implementing the law. The example might be cited of Japan, which for many years placed heaviest emphasis on promulgation of guidelines identifying specific types of conduct regarded as problematic rather than on enforcement proceedings.

Figure 1

China Becomes Number One IC Consuming Region in 2005



Source: IC Insights January 9, 2006.

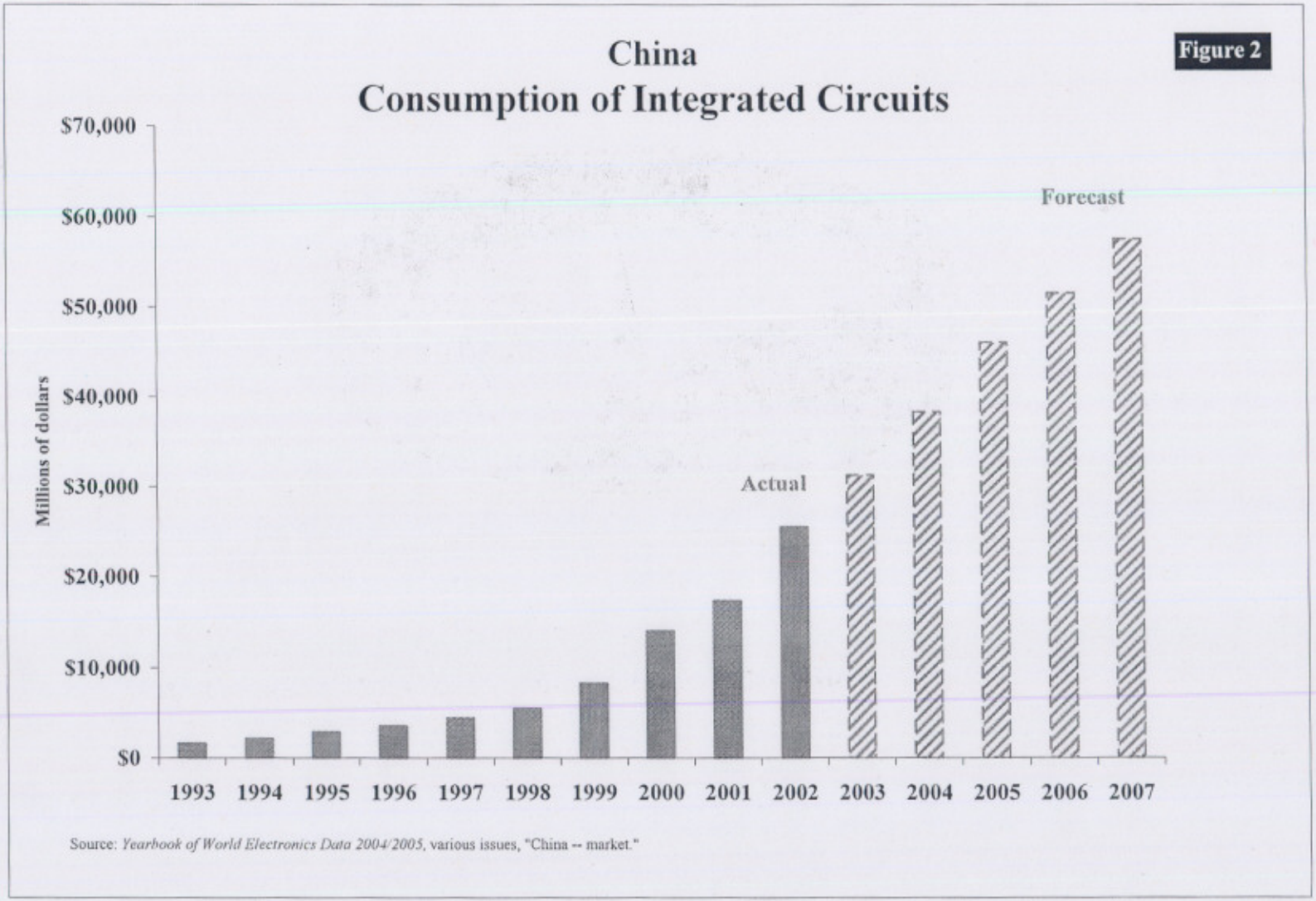
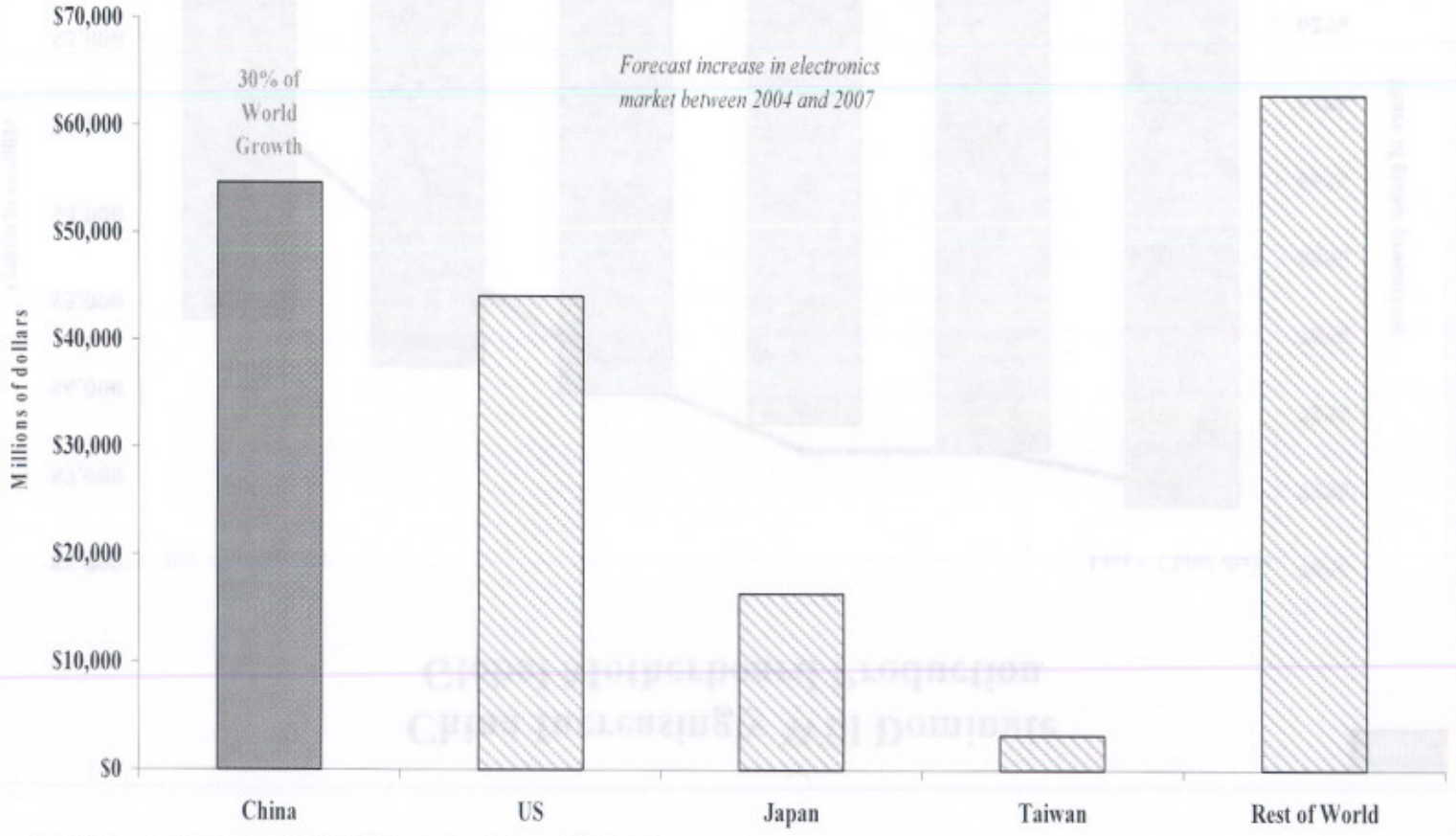

China
Consumption of Integrated Circuits
Figure 2
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
Millions of dollars
Actual
Forecast
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Source: Yearbook of World Electronics Data 2004/2005, various issues, "China -- market."

Figure 3

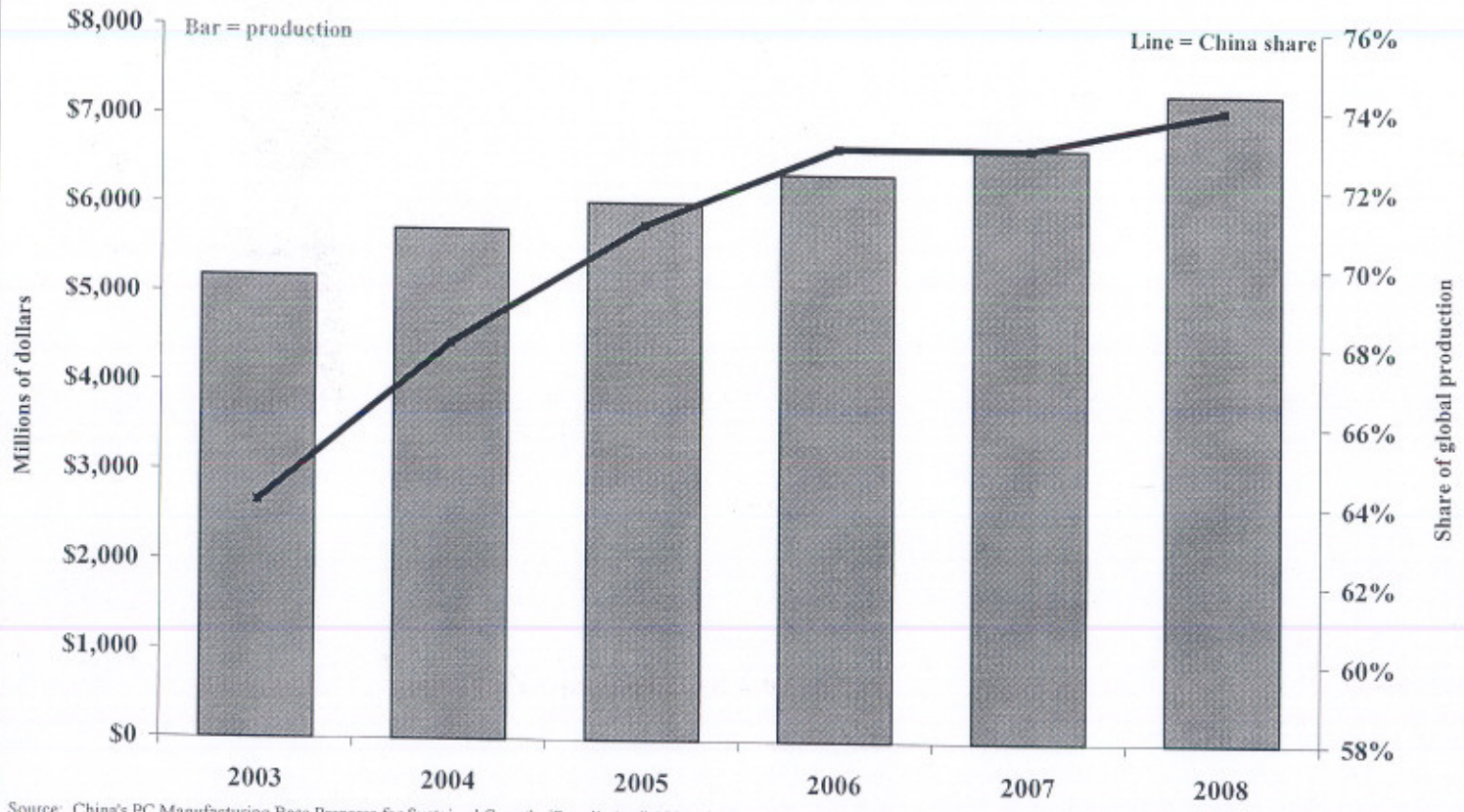
China Leads World in Electronics Market Growth



Source: *Yearbook of World Electonics Data 2004 2005* , various issues, Summary of World Markets.

Figure 4

China Increasingly Will Dominate Global Motherboard Production



Source: China's PC Manufacturing Base Prepares for Sustained Growth, iSuppli, April 2004, p. 15.